

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY


(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

REC'D 23 NOV 2005

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Applicant's or agent's file reference PPD70335/WO		FOR FURTHER ACTION		See Form PCT/PEA/416
International application No. PCT/GB2004/005117		International filing date (day/month/year) 06.12.2004	Priority date (day/month/year) 09.12.2003	
International Patent Classification (IPC) or national classification and IPC A01N33/04				
Applicant SYNGENTA LIMITED				
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 9 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input type="checkbox"/> sent to the applicant and to the International Bureau) a total of sheets, as follows:</p> <p><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>				
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the opinion</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>				
Date of submission of the demand 21.06.2005		Date of completion of this report 22.11.2005		
Name and mailing address of the international preliminary examining authority:  European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016		Authorized Officer Lamers, W Telephone No. +31 70 340-		



**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/GB2004/005117

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

Description, Pages

1-12 as originally filed

Claims, Numbers

1-22 as originally filed

- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
 - ☐ any table(s) related to sequence listing (*specify*):
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
 - ☐ any table(s) related to sequence listing (*specify*):

* If item 4 applies, some or all of these sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
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Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	8-11
	No: Claims	1-7 12-22
Inventive step (IS)	Yes: Claims	
	No: Claims	1-22
Industrial applicability (IA)	Yes: Claims	1-22
	No: Claims	

2. Citations and explanations (Rule 70.7):

see separate sheet

**INTERNATIONAL PRELIMINARY
REPORT ON PATENTABILITY
(SEPARATE SHEET)**

International application No.

PCT/GB2004/005117

Re Item V

**Reasoned statement with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement**

Reference is made to the following documents:

- D1: DATABASE WPI Section Ch, Week 199935 Derwent Publications Ltd., London, GB; Class C03, AN 1992-265705 XP002330252 & JP 02 926977 B2 (KURITA WATER IND LTD) 28 July 1999 (1999-07-28)
- D2: DATABASE CHEMABS [Online] CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, US; XP002330248 retrieved from STN-INTERNATIONAL Database accession no. 124:310243
- D3: DATABASE CHEMABS [Online] CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, US; A.A.EL-MOURSRY ET AL.: "Some chemical additives to increase the activity spectrum of *Bacillus thuringiensis kurstaki* (Dipel 2x) against the rice moth *Corcyra cephalonica*" XP002330249 retrieved from STN-INTERNATIONAL Database accession no. 125:161097
- D4: GB-A-2 022 070 (SANDOZ LTD) 12 December 1979 (1979-12-12)
- D5: DE 36 31 848 A1 (DR. WOLMAN GMBH) 24 March 1988 (1988-03-24)
- D6: US-A-3 755 595 (GORING C,US ET AL) 28 August 1973 (1973-08-28)
- D7: EP-A-0 664 081 (HOECHST SCHERING AGREVO GMBH) 26 July 1995 (1995-07-26)
- D8: WO 97/01281 A (KAO CORPORATION; HASEBE, KEIKO; SUZUKI, TADAYUKI; HIOKI, YUICHI) 16 January 1997 (1997-01-16)
- D9: WO 02/21924 A (MONSANTO TECHNOLOGY LLC; CROCKETT, RON, P; DYSLEWSKI, ANDREW; KRAMER,) 21 March 2002 (2002-03-21)
- D10: WO 97/32476 A (KAO CORPORATION; MONSANTO COMPANY; OKANO, TETSUYA; HASEBE, KEIKO; SUZU) 12 September 1997 (1997-09-12)
- D11: DATABASE CHEMABS [Online] CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, US; K.E.PALLET ET AL.: "The role of light and oxygen in the action of the photosynthetic inhibitor herbicide monuron" XP002330250 retrieved from STN-INTERNATIONAL Database accession no. 92:35860
- D12: DATABASE CHEMABS [Online] CHEMICAL ABSTRACTS SERVICE,

COLUMBUS, OHIO, US; L.ABATE ET AL.: "Binding of glyphosate by open-chain polyammonium cations" XP002330251 retrieved from STN-

INTERNATIONAL Database accession no. 131:318760

D13: WO 02/076212 A (SYNGENTA LIMITED; ASHFORD, EMMA, JANE;
HEYLINGS, JONATHAN, ROY; SHAUNA) 3 October 2002 (2002-10-03)

V.a. Certain observations on the international application

V.a.1. The subject matter of claims 1-22 does not involve an inventive step (Art. 33(3) PCT):

The subject matter of the claims relates to mixtures of agrochemicals with amine adjuvants. It appears to be absolutely improbable, that any combination between arbitrary agrochemicals and arbitrary amines, and also between the specific agrochemicals mentioned in claim 2 and an arbitrary amine, or an arbitrary agrochemical and the specific amines TEDA or TMEDA as listed in claim 5 shows an advantageous enhanced effect. (The attention is drawn to document D12 which discloses that the activity of the herbicide monuron is even decreased by the addition of DABCO (1,4-diazabicyclo[2.2.2]octane = triethylenediamine (TEDA)).

Combining agrochemicals with adjuvants is no more than routine practice followed by the skilled person and as such does not involve an inventive step. A surprisingly enhanced effect, which could support that an inventive step is involved, has been described in the present application only for the combinations of paraquat with TEDA. It follows that the scope of the claims of the present application also extends to compositions of agrochemicals with amine adjuvants, which do not show any advantageous effect and therefore covers subject matter, which does not involve an inventive step (Art. 33(3) PCT).

V.a.2. The subject matter of claim 1-22 is not supported by the description (Art. 6 PCT):

As mentioned under point V.a.1. the subject matter of the claims extends to an vast amount of combinations between arbitrary agrochemicals and arbitrary amine adjuvants, between specific agrochemicals mentioned in claim 2 and arbitrary amines, or between arbitrary agrochemicals and the specific amines TEDA or TMEDA as listed in claim 5. Any

advantageous effect however is shown in the present application only for combinations of paraquat with TEDA. It follows that the claims are not fully supported by the description as required by Art. 6 PCT.

V.a.3. Taking into consideration on the one hand the vast amount of possible combinations between arbitrary agrochemicals and arbitrary amine adjuvants, between specific agrochemicals mentioned in claim 2 and arbitrary amines, or between arbitrary agrochemicals and the specific amines TEDA or TMEDA as listed in claim 5, and on the other hand the limited number of combinations for which an advantageous effect can be expected, it appears that it is not sufficiently clear for the skilled person, which parts of the claimed and described alleged inventions can be carried out with a reasonable chance of achieving the promised advantageous effect. It follows that a selection of specific combinations, for which an advantageous effect appears, cannot be made by the skilled person without using inventive activity. The present application therefore does not meet the requirements of Art. 5 PCT.

V.b. Novelty

The subject matter of claims 1-4 and 12-22 is not new (Art. 33(2) PCT):

Document D1 discloses compositions comprising insecticides, 1,4-diazabicyclo-[2.2.2]octane, which is triethylenediamine (TEDA), and solvents (see D1: abstract). With respect to D1 the subject matter of claims 1, 5 and 12 is not new (Art. 33(2) PCT).

Document D2 discloses agrochemical compositions comprising bactericides and 1,4-diazabicyclo-[2.2.2]octane, the compositions being solved in water (see D2: abstract and index terms (IT)). With respect to D2 the subject matter of claims 1, 5, and 12 is not new (Art. 33(2) PCT).

Documents D1 and D2 are abstract of Japanese patent documents. It is assumed that the original documents contain further material relevant for establishing whether the

requirements of the PCT with respect to novelty are fulfilled.

Document D3 discloses compositions comprising the endotoxin of *Bacillus thuringiensis kurstaki* and ethylene diamine. The amine adjuvant is added for enhancing the activity of the endotoxin (see D3: abstract and index terms (IT)). With respect to D3 the subject matter of claim 1 is not new (Art. 33(2) PCT).

Document D4 discloses compositions for defoliating crops, comprising herbicides and activating adjuvants, the adjuvants comprising secondary or tertiary amines. The ratios of herbicides and adjuvants are between 0.5-4 : 0.5-5. The document discloses various formulations comprising emulsifiers, additional solvents and surfactants in various amounts (see D4: page 1, lines 9 - 42; page 2, lines 29 - 45, examples). With respect to D4 the subject matter of claims 1, 6, 7 and 12-22 is not new (Art. 33(2) PCT).

Document D5 discloses liquid concentrates for agricultural application, comprising dazomet, various amines and additional solvents (see D5: claims; col. 1, lines 25-26; line 53 - col. 2, line 65). With respect to D5 the subject matter of claims 1, 6, 7, 12, 15, 21 and 22 is not new (Art. 33(2) PCT).

Document D6 discloses fungicidal compositions comprising tricyclohexyltin compounds and activity enhancing amines. The document discloses various formulations comprising in addition solvents and surface active agents in various amounts (see D6: col. 1, lines 14-20; line 66 - col. 3, line 62; examples). With respect to D6 the subject matter of claims 1, 6, 7, and 12-22 is not new (Art. 33(2) PCT).

Document D7 discloses compositions comprising certain insecticides and salts of various amines as adjuvants, the combinations showing synergistic effects. The document discloses formulations comprising various amounts of further surface active agents, solvents and further additives (see D7: page 2, line 4 - page 4, line 32; page 6, line 40 - page 7, line 52; examples). With respect to D7 the subject matter of claims 1, 6, 7 and 12-22 is not new (Art. 33(2) PCT).

Document D8 discloses compositions comprising amino acid series herbicides (including glyphosate) and tertiary amines as activity enhancing adjuvants. The document further

discloses formulations comprising additives like solvents, surface active agents etc. (see D8: page 1, paragr. 1; page 4, paragr. 2 - page 5, paragr. 1; page 8, paragr. 2; page 11, paragr. 3 - page 15, paragr. 2; examples). With respect to D8 the subject matter of claims 1, 2, 6, 7, and 12-22 is not new (Art. 33(2) PCT).

Document D9 discloses compositions comprising glyphosate, bipyridilium herbicides like paraquat and diquat, and surfactant compositions comprising amine adjuvants. The document discloses formulations comprising further adjuvants like surface active agents etc. (see D9: page 1, lines 8 - 14; page 5, line 9 - page 10, line 22; page 13, line 33 - page 15, line 32; page 24, line 15 - page 25, line 17; page 28, line 9 - page 29, line 12; page 33; page 49, line 10 - page 70, line 14; page 74, line 15 - page 82, line 12; examples). With respect to D9 the subject matter of claims 1-4, 6, 7, and 12-22 is not new (Art. 33(2) PCT).

Document D10 discloses compositions comprising various agrochemicals, including paraquat, diquat and glyphosate, surface active amine derivatives and salts of amine adjuvants (see D10: page 1, paragr. 1-2; page 2, paragr. 2; page 3, paragr. 2 - page 6, paragr. 1; page 10, paragr. 4 - page 11, paragr. 1; page 16, paragr. 2 - page 23, paragr. 1; examples). With respect to D10 the subject matter of claims 1-4, 6, 7, and 12-22 is not new (Art. 33(2) PCT).

Document D11 discloses compositions comprising glyphosate and various amines (see D11: abstract). With respect to D11 the subject matter of claims 1 and 2 is not new (Art. 33(2) PCT).

Document D12 discloses compositions of monuron and 1,4-diazabicyclo-[2.2.2]octane, which is triethylenediamine (TEDA) (see D12: abstract). With respect to D12 the subject matter of claims 1 and 5 is not new (Art. 33(2) PCT).

V.c. Inventive Step

As the subject matter of claims 1-7 and 12-22 is not new, it cannot be considered as

involving an inventive step (Art. 33(3) PCT).

Dependent claims 8 - 11 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of inventive step, because they merely relate to combinations with formulations of bipyridilium herbicides which have already been disclosed in document D13.

The subject matter of all claims therefore does not involve an inventive step (Art. 33(3) PCT).

V.d. Industrial applicability

The subject matter of claims 1-22 appears to be industrially applicable (Art. 33(4) PCT).